

Sheet 1 of 1

Form 1449\*

Atty. Docket No.: 303.466US1

Serial No. 09/069,668

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

Applicant: Kie Y. Ahn et al.

Filing Date: April 29, 1998

Group: 2814

U.S. PATENT DOCUMENTS

\*\*Examiner Filing Date Document Number Date Initial Name Class Subclass If Appropriate FOREIGN PATENT DOCUMENTS

\*\*Examiner Translation Document Number Date Initial Country Class Subclass

OTHER DOCUMENTS

\*\*Examiner Initial

(Including Author, Title, Date, Pertinent Pages, Etc.)

Hamakawa, Y., et al., "Optoelectronics and Photovoltaic Applications of Microcrystalline SiC", Materials Research Society Symposium Proceedings, 164, Boston, MA, 291-301, (11/29-12/1, 1989)

Mohajerzadeh, S., et al., "A Low Energy Ion Beam Assisted Deposition Technique for Realizaing iso-type SiGe/Si hetero-interface diodes", Thin Solid Films, 283, 182-187, (1996)

Mohajerzadeh, S., et al., "A Low-Temperature Ion Vapor Deposition Technique for Silicon and Silicon-Germanium Epitaxy", Canadian J. Physics, 74, (1996)

Mohri, M., et al., "Effect of SiF(4)/SiH(4)/H(2) Flow Rates on Film Properties of Low-Temperature Polycrystalline Silicon Films Prepared by Plasma Enhanced Chemical Vapor Deposition", IEICE Transactions on Electronics, E77-C, 1677-1684, (Oct. 1994)

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\*Substitute Disclosure Statement

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Document Number	Date	U.S. PATENT DOCUMENTS			Filing Date
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•					03/27/84
•					03/14/86
		•			05/15/89
.5,051,805	09/24/1991	Custode	357	34	05/25/90
.5,280,188	01/18/1994	Iwasaki	257	370	12/08/92
. 5,324,684	06/28/1994	Kermani, et al.	437	95	02/25/92
.5,341,016	08/23/1994	Prall, et al.	257	412	06/16/93
. 5,371,035	12/06/1994	Pfiester, et al.	437	69	02/01/93
. 5,436,496	07/25/1995	Jerome, et al.	257	529	02/14/94
. 5,442,226	08/15/1995	Maeda, et al.	257	557	04/26/93
. 5,470,801	11/28/1995	Kapoor, et al.	437	238	06/28/93
	04/23/1996		257	522	01/17/95
		•	437	31	06/07/95
		Chen, et al.	84	615	11/13/95
•	• • •	Miwa, et al.	437		06/07/95
		-			09/26/95
•	· ·	· ·			09/12/95
					03/31/96
5,731,240	03/24/1998	Kataoka	438	364	04/04/95
	FC	REIGN PATENT DOCUMENTS	5		
Document Number	Date	Country	Class	Subclass	Translation Yes No
	5,341,016 5,371,035 5,436,496 5,442,226 5,470,801 5,510,645 5,541,124 5,639,979 5,643,806 5,648,280 5,698,890 5,723,378 5,731,240	11/18/1980 14,234,357 11/18/1980 24,252,582 02/24/1981 09/11/1984 11/20/1984 11/20/1984 11/20/1985 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1987 11/20/1989 11/20/20/1991 11/20/1991 11/20/1994 11/20/1995 11/20/1995 11/20/1995 11/20/1995 11/20/1995 11/20/1995 11/20/1995 11/20/1995 11/20/1997 11/20/1998	11/18/1980 Scheppele 4,252,582 02/24/1981 Anantha, et al. 4,470,852 09/11/1984 Ellsworth 11/20/1984 Isaac, et al. 4,507,847 04/02/1985 Sullivan 4,651,409 03/24/1987 Ellsworth, et al. 4,702,941 10/27/1987 Mitchell, et al. 4,800,177 01/24/1989 Nakamae 5,010,039 04/23/1991 Ku, et al. 5,051,805 09/24/1991 Custode 5,280,188 01/18/1994 Iwasaki 5,324,684 06/28/1994 Kermani, et al. 5,341,016 08/23/1994 Prall, et al. 5,341,016 08/23/1994 Priester, et al. 5,436,496 07/25/1995 Jerome, et al. 5,442,226 08/15/1995 Maeda, et al. 5,470,801 11/28/1995 Kapoor, et al. 5,5510,645 04/23/1996 Fitch, et al. 5,551,124 07/30/1996 Miwa, et al. 5,639,979 06/17/1997 Chen, et al. 5,643,806 07/01/1997 Miwa, et al. 5,698,890 12/16/1997 Sato 5,723,378 03/03/1998 Sato 5,731,240 03/24/1998 Kataoka	14,234,357	11/18/1980 Scheppele 148 1.5 4,252,582 02/24/1981 Anantha, et al. 148 175 4,470,852 09/11/1984 Ellsworth 148 1.5 4,483,726 11/20/1984 Isaac, et al. 148 187 4,507,847 04/02/1985 Sullivan 29 576 4,651,409 03/24/1987 Ellsworth, et al. 29 5768 4,702,941 10/27/1987 Mitchell, et al. 427 250 4,800,177 01/24/1989 Nakamae 437 193 5,010,039 04/23/1991 Ku, et al. 437 228 5,051,805 09/24/1991 Custode 357 34 5,324,684 06/28/1994 Kermani, et al. 437 95 5,341,016 08/23/1994 Prall, et al. 257 412 5,3371,035 12/06/1994 Pfiester, et al. 437 69 5,436,496 07/25/1995 Jerome, et al. 437 69 5,436,496 07/25/1995 Maeda, et al. 257 529 5,442,226 08/15/1995 Maeda, et al. 257 557 5,470,801 11/28/1995 Kapoor, et al. 437 238 5,5510,645 04/23/1996 Fitch, et al. 257 522 5,541,124 07/30/1996 Miwa, et al. 437 31 5,639,979 06/17/1997 Chen, et al. 437 31 5,648,280 07/15/1997 Kato 438 309 5,731,240 03/24/1998 Kataoka 438 364

## OTHER DOCUMENTS

Initial

(Including Author, Title, Date, Pertinent Pages, Etc.)

"Comparison of Experimental and Theoretical Results on Ashburn, P., et al., Polysilicon Emitter Bipolar Transistors", IEEE Trans. on Electron Devices. Vol. ED-31, 853-60, (1984)

Examiner

Date Considered 13 JANUARY ZOOC

\*Substitute Disclosure Statement Form (PTO-1449)

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OTHER DOCUMENTS

(Including Author, Title, Date, Pertinent Pages, Etc.)

RECEIVED

Initial

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**GROUP 2500** Berezhnoi, A., Silicon and its Binary Systems, Consultants Bureau, New York, 84, (1960) Chor, E.F., et al., "Emitter Resistance of Arsenic- and Phosphorus-Doped Polysilicon Emitter Transistors", IEEE Trans. on Electron Devices, Vol. ED-6, No. 10, 516-18, (1985)Fukuda, Y., et al., "A New Fusible-Type Programmable Element Composed of Aluminum and Polysilicon", IEEE Trans. on Electron Devices, ED-33, (Feb., 1986) Hanna, J., et al., "Early Stage of Polycrystalline Growth of Ge and SiGe by Reactive Thermal CVD from GeF(4) and Si(2)H(6)", Materials Res. Soc. Symp. Boston, MA, 877-881, (Nov/Dec, 1994) Hansen, P., Constitution of Binary Alloys, McGraw-Hill, New York, 103, (1958)"Formation of Silicon Oxide over Gold Layers on Silicon Hiraki, A., et al., Substrates", J. Applied Physics, 43, 3643-3649, (Sept., 1972) Hiraki, A., et al., "Low-Temperature Migration of Silicon in Metal Films on Silicon Substrates Studiedby Backscattering Techniques", J. Vacuum Science and Tech., 9, 155-158, (Jan/Feb., 1972) Horie, H., et al., "Novel High Aspect Ratio Aluminum Plug for Logic/DRAM LSI's Using Polysilicon-Aluminum Substitute", Technical Digest: IEEE Int. Electron Devices Meeting, San Francisco, CA, 946-948, (1996)Hurley, P., et al., "Low Temperature Plasma Oxidation of Polycrystalline Silicon", Proc. 7th European Conf. on Insulating Films on Semiconductors: Contributed Papers, Section 5, IOP Publishing Ltd., 235-238, (1991)"Novel Polysilicon/TiN Stacked-Gate Structure for Hwang, J., et al., Fully-Depleted SOI/CMOS", Technical Digest: Int. Electron Devices Meeting, (Dec. 1992) San Francisco, CA, 345-348, King, T., et al., "Deposition and Properties of Low-Pressure Chemical-Vapor Deposited Polycrystalline Silicon-Germanium Films", J. Electrochemical Society, 141, 2235-2241, (August 1994)

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OTHER DOCUMENTS

RECEIVED

\*\*Examiner Initial (Including Author, Title, Date, Pertinent Pages, Etc.)

1111 6 6 1798

**GROUP 2500** 

Shafi, Z.A., et al., "Poly-Crystalline Silicon-Carbide (SiC) Emitter Bipolar Transistors", IEEE Bipolar Circuits and Technology Meeting, Minneapolis, MN, 67-70, (1991)"Very High Speed Silicon Bipolar Transistors with In-Situ Uchino, T., et al., Doped Polysilicon Emitter and Rapid Vapor-Phase Doping Base", IEEE Trans. on Electron Devices, Vol. 42, No. 1, 406-12, (1995) Ushiku, Y., et al., "Planarized Silver Interconnect Technology with a Ti Self-Passivation Technique for Deep Sub-Micron ULSIs", 1993 Symp. on VLSI Technology: Digest of Technical Papers, 121-122, (1993)ASM Handbook of Ternary Alloy Phase Diagrams, Vol. 3, Villars, P., et al., International, 2893-99, Walczyk, F., et al., "Tailoring Interfacial Oxide for Polysilicon Bit-Cell Contacts and Emitters with In Situ Vapor HF Interface Cleaning and Polysilicon Deposition in a 4Mbit BiCMOS Fast Static RAM", Proc. IEEE Bipolar Circuits and Technology Meeting, Minneapolis, MN, 84-87, (1992) "Suppression of the Boron Penetration Induced Si/SiO2 Wu, S., et al., Interface Degradation by Using a Stacked-Amorphous-Silicon Film as the Gate Structure for pMOSFET", IEEE Electron Device Letters, 15, 160-162, (May

Examiner M. 10 1	Date Considered
William Calan	13 TANUARY 2000
*Substitute Disclosure Statement Form (PTO-1449)	

<sup>\*\*</sup>EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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OTHER DOCUMENTS

\*\*Examiner Initial (Including Author, Title, Date, Pertinent Pages, Etc.)

RECEIVED

الل کے اللا

(m)	Lee, D.H., et al., "Gate Oxide Integrity (GOI) of MOS GROUP 2500 W/TiN stacked gate", 1996 Symposium on VLSI Technology Digest of Technical Papers, 208-209, (1996)
(M)	Li, C., et al., "Low Temperature Heteroepitaxial Growth of Si(1-x)Ge(x)-on-Si by Photo-Enhanced Ultra High Vacuum Chemical Vapor Deposition Using Si(2)H(6) and Ge(2)H(6)", J. Electronic Materials, 24, 875-884, (July 1995)
6	Li, P., et al., "Formation of Stoichiometric SiGe Oxide by Electron Cyclotron Resonance Plasma", <u>Appl. Phys. Lett. 60</u> , 3265-3267, (June 1992)
6W	Lyman, T.e., "Metallography, Structure and Phase Diagrams", <u>Metals Handbook,</u> 8, American Society for Metals; Metals Park, Ohio, 253, 256, 260, 263,, (1989)
<u></u>	Moffatt, W., <u>The Handbook of Binary Phase Diagrams</u> , General Electric Company, pub., Volume 1, 3/84, (1978)
62	Mohajerzadeh, S., et al., "A Low Energy Ion Beam Assisted Deposition Technique for Realizaing iso-type SiGe/Si hetero-interface diodes", <u>Thin Solid</u> <u>Films, 283</u> , 182-187, (1996)
6	Mohri, M., et al., "Effect of SiF(4)/SiH(4)/H(2) Flow Rates on Film Properties of Low-Temperature Polycrystalline Silicon Films Prepared by Plasma Enhanced Chemical Vapor Deposition", <u>IEICE Transactions on Electronics</u> , E77-C, 1677-1684, (Oct. 1994)
60	Moller, H., et al., "In-situ p- and n-Doping of Low Temperature Grown Beta-SiC Epitaxial Layers on Silicon", <u>Proc. of International Conference on</u> Silicon Carbide and Related Materials, IOP Publishing, UK, 497-500, (1996)
9	Mukhopadhyay, M., et al., "Properties of SiGe Oxides Grown in a Microwave Oxygen Plasma", <u>J. Applied Physics, 78</u> , 6135-6140, (Nov. 1995)
$\mathcal{Q}$	Predel, B., et al., "Die Zustandsdiagramme Silber-Germanium-Silizium und Gold-Germanium-Silizium", <u>J. Less-Common Metals, 44</u> , 39-49, (Jan. 1976)
<u>a</u>	Schadel, H., et al., "Activity of Liquid Silver-Silicon Alloys", Trans.  American Institute of Mining and Metallurgical Engineers, 188, 1282-1283,  (Oct. 1950)

Examiner Milling Col	Date Considered  13 JANUARY 2000
*Substitute Disclosure Statement Form (PTO-1449)	

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